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ABSTRACT

The relationships between somatic and sociological-psychological variables are complex. Each mental change which occurs in aging is more or less closely accompanied by somatic changes. The reverse is also true. The objective state of health and the subjective feeling of well-being are linked. Both can exert an influence over behavior and attitudes. In therapy with older patients it is important to understand the subjective appraisal of one's health. It is a necessary condition for successful therapy. If the state of health is over- or underestimated by the patient, it can prevent successful therapeutic and prophylactic measures. Conversation between therapist and patient is very important in diagnosing the subjective feeling of well-being. (Author/NFD)

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Medical and psychological determinants on the development in aged persons

When systematic research into aging began, the aging process was regarded as being primarily biologically determined. The more psychology and sociology, alongside statistics and medicine, became concerned with research into aging, the more this standpoint gave way to a rather more factorial view of the determinants of aging. Thus one differentiates today between biological, sociological, economic, psychological and other processes of change in the aging person. THOMAE (1968) names a total of 6 distinguishable planes in which changes due to aging can take place with different intensities in the aging individual:

1. the plane of biochemical and physiological changes
2. the plane of morbid changes
3. the plane of functional-psychological changes
4. the plane of psychological changes or personality
5. the plane of social and social-psychological changes
6. the plane of changes stemming from the individual's confrontation with his own aging.

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Accordingly, greater changes with aging are observed in some planes than in others; taken together they constitute the observable individual aging process. It is clear that this leads the way to a concept which is in a position to indicate the large number of observable and possible variants of human aging. Moreover it is particularly important that processes are referred to in this context which can be traced back to the way in which the individual faces growing old. These "cognitive" processes were singled out by THOMAE (1971) in

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his cognitive theory of aging as an essential group of determining factors in aging. Thus - put briefly - one's subjective attitude to one's own aging and to one's own situation have a decisive effect on the aging process.

This first step towards the explanation of aging processes forms a framework for the following contribution, in which data concerning the subjective and objective state of health and their relationship to behavioural data are considered.

The data which support the present account are taken from the longitudinal gerontological study being carried out in Bonn, which was started in 1965 under the direction of H. THOMAE and in which the sixth phase of testing and interviewing has just been completed. In this study originally 222 60- to 70-year-old men and women of the social middle class were each examined for 1 week by means of different tests, reaction-time experiments, questionnaires and interviews. Along with test data concerning intelligence, reaction-times and some personality features (e.g. rigidity), attitudes, opinions, information about various modes of behaviour and behaviour-rations were recorded. In addition a physician undertook a short medical examination of each subject and among other things used the information he obtained to rate the subject's general state of health on a scale ranging from 1 = very good to 6 = much impaired. According to this assessment all our subjects were relatively healthy, active and mobile - necessary conditions for a longitudinal study of the kind chosen here (for a description of the sample see SCHMITZ-SCHERZER 1976).

It was already stated that the subjective and the objective state of health were to be investigated in this paper with regard to their respective behavioural correlates.

The objective state of health was quantified by use of the assessment of the examining physician made on the basis of the medical information he had obtained. It was rated on a 5-point scale from 1 = very good to 5 = much impaired.

The subjective state of health was rated on an analogous 5-point scale, by 2 interviewers in each case, on the basis of information, obtained in interviews over a total of some hours, about the subject's state of health as he perceived it to be.

The two measures correlated positively and significantly (0.31 - 0.25) as would be expected.

All the same, only 10 % of the common variance was 'accounted for' by this correlation; the remaining 90 % on the other hand represent so-called free variance. Arranged in the form of a table the scores received by the subjects for the objective and the subjective state of health reveal detailed information (see table 1).

Table 1:

Self-appraisal of the state of health compared to physician's assessment (percentage distribution within the groups of men and women).

	Men	Women
subjective state of health worse than objective	15.3	26.2
subjective state of health corresponds to objective	23.7	34.9
subjective state of health better than objective	61.0	38.9

The table shows that according to the obtained information 15.3 % of the men and 26.2 % of the women assess their own state of health as worse than the doctor rates it while 61 % of the men and 38.9 % of the women perceive their health as better than the doctor rates it. Only for 23.7 % of the men and 34.9 % of the women did the two measures correspond.

All reported correlations are phi-coefficients.

Of course the objection to these data could be raised from a methodological standpoint that in particular the lack of reliability of the measurements could influence the results. However, according to an investigation carried out by the author (SCHMITZ-SCHERZER 1976), these measurements proved to be sufficiently reliable. The analysis of repeated measurements after one year yielded a reliability coefficient according to a formula from HEISE (1971) of 0.71 for the subjective and 0.88 for the objective state of health.

The somewhat poor agreement between the objective and the subjective state of health shows two things - firstly the justification of including mental as well as medical factors in a definition of health (as in the definition suggested by the WHO) and secondly the necessity of considering the correlates of the two measures separately.

The correlations between the physician's judgement of the general condition of our subjects and social or psychological criteria is shown in table 2 again for men and women separately (see table 2).

Table 2:

Correlations between the objective state of health and social and psychological variables:

	Men	Women
socio-economic status		0.43
intelligence (total standard score in HAWIE)	-0.23	-0.29
reaction capacity (Kiel Multiple Reaction Device)	-0.44	-0.30
rigidity (personality measure from RIEGEL questionnaire)		-0.25
intolerance (RIEGEL questionnaire)	-0.25	
experimenters' ratings on the basis of observed behaviour in the test situation		
- activity		-0.35
- frame of mind	-0.22	-0.27
experimenters' ratings on the basis of information obtained in the interviews		
- attitude to other people	-0.23	
- satisfaction with teh present life situation	-0.33	
- feeling of being needed	-0.45	
- concern with the end of life	-0.22	-0.25
leisure activities		
- frequency of travel	-0.27	
- length of time spent listening to the radio	0.31	
- length of the average weekday		-0.22
- length of the average night's sleep		0.31

From table 2 it can be seen that the men are more intelligent, react faster and are less intolerant, the healthier the doctor judged them to be. The better the objective state of health, the more positively their frame of mind is rated, and the more positive are their attitudes to other people. The worse the state of health as assessed by the doctor, the less satisfied they are with the present life situation, the less they feel needed and the more they are concerned with the end of life.

In summary it can be said of the male group that a relatively good objective state of health is accompanied by indications of a relatively positive self-image and attitude to others. Besides this, better intellectual ability and a better reaction capacity can be observed.

For the female group the picture is very similar, though it is also found that women who are jedged to be in relatively poor health by the doctor are in a worse socio-economic situation. Besides this they are less active and more often concerned with the end of life. They also show less active behaviour.

Generally it may be concluded that with increasingly poor health, as assessed by the doctor, mental abilities like intelligence and reaction capacity are reduced while negative aspects of the self-image and the attitude to others and indications of intolerance (in men) and rigidity (in women) are found more frequently.

But what about concrete behaviour patterns? We saw that the women showed less active behaviour, the less healthy the doctor found them to be. Moreover for the men there was a decrease in the frequency of travel and an increase in the amount of time spent listening to the radio with increasingly poor health. In the field of leisure activities a relatively shorter average weekday and a greater length of time spent sleeping are noticed in the group of women (SCHMITZ-SCHERZER 1969).

The correlations between the subjective state of health and psychological and social variables show certain deviations from the picture found for the medicaly assessed state of health. While intelligence and achievement data in particular correlate more highly with the objective state of health the perception of the present situation, the leisure activities,

the social contacts and the attitude to the future tend rather, or at least more often, to correspond to the subjective state of health. The more negatively the subjectively perceived state of health was rated, the less often leisure activities and social contacts outside the family were observed, the less clear the orientation towards the future and the satisfaction with the general life situation seemed (see table 3).

Table 3:

	Men	Women
frequency of travel	-0.21	
length of time spent watching TV		-0.28
gardening	-0.27	
going for short walks	-0.32	
long country walks	-0.36	
contact with neighbours	-0.29	-0.32
contact with friends and acquaintances		-0.29
experimenters' ratings on the basis of information obtained in the interviews		
- attitude to the future	-0.21	-0.25
- satisfaction with the general life situation	-0.24	-0.21

While the correlations calculated so far are all significant or highly significant they are numerically relatively small. This can be seen in many studies which correlate medical and psychological variables with one another. It seemed that the regulating and influencing processes whose existence can be conjectured between the physiological and psychological spheres do not represent a direct interaction but occur by way of a large number of intermediate links and intervening variables of which very little is yet known. This is also shown in studies using laboratory data (SCHMITZ-SCHERZER et al. 1975).

The comparison of extreme groups in which people burdened with multiple health problems are compared with those having no, or only slight, such problems could be a satisfactory method of handling a problem of this sort. Thus LEHR, THOMAE and SCHMITZ-SCHERZER (1972) compared subjects whose health was impaired in at least 5 of the following areas with subjects who had impaired health in none or only in one of the named areas:

blood pressure
signs of sclerosis
hearing
vision
signs of heart insufficiency
motor function

Here it was found that the socioeconomic status of people with multiple somatic handicaps is worse and that their income is lower. These people seem less active in their behaviour, achieve poorer results in the HAWIE and portray themselves in the RIEGEL questionnaire as more rigid and having a negative attitude to life. In this extreme-group comparison, which is based on the chi-squared method or, where the data were suitable, on the t-test, differences between men and women were found which suggest that in general the men were affected in the way which might be expected with regard to their attitude to the future, their feeling of being needed and their general contentment by multiple somatic handicaps.

In this comparison the results reported earlier in this paper were confirmed and clarified.

The results presented here need to be interpreted with regard to further possible research strategies and in connection with practical work with old people.

Further research in this area would first have to solve methodological and instrumental problems. The present study already indicated the disadvantages of the calculation of correlations, a method employed by a number of other studies in this field. Not only does it give rise mostly to relatively small significant coefficients but it also leads to a disregard of sample-specific factors in the interpretation. Moreover it contributes relatively little to a gain in knowledge in this field to produce further correlations as long as no theory is able to deal with both aspects of the aging process - the psychological as well as the somatic. Even the consideration of laboratory data brings little progress vis a vis this situation, quite apart from the difficulty of explaining a possibly positive correlation between the number of white blood corpuscles and the intelligence quotient. The same is true for methods based on correlations, like factor analysis and to some extent path analysis as well - quite apart from the fact that the data at least do not admit of the use of such procedures. Here the use of nonparametric methods does seem suitable, even if their use doesn't allow the solution of the central problem of this study. This seems rather to be due to the variables which are employed: on the one side laboratory data, relatively specific diagnoses, heardly any indices relating to the objective severity of an illness or the greater sphere of influence of a somatic disturbance; on the other side relatively more global measures, often estimations too (with corresponding scatter). Added to that is often the lack of testable psychosomatic hypotheses. This situation can only admit of numerically small correlation coefficients.

It is therefore necessary to look for instruments and measures in psychology and medicine which are comparable with regard to their data-technical level and to the extent of the information they yield.

They seem to permit a conclusion which is fairly certain to be correct: each mental change which occurs in aging is more or less closely accompanied by processes of somatic change and vice versa. Alongside the objective state of health the subjective feeling of well-being is important here, since both can exert an influence on concrete behaviour whether directly or by modulating relevant attitudes. That is to say that in the therapy of elderly and old patients the importance of correcting the subjective appraisal of the state of health where necessary should be borne in mind, just as a necessary condition for the success of therapies and diets in their adjustment to reality. Put briefly: therapeutic and prophylactic measures must not only be bound by objective facts but must also have regard to the subjective feelings mentioned here. If the state of health as diagnosed by the doctor is over- or underestimated by the patient this can present an obstacle to the success of therapeutic and prophylactic measures. This indicates the importance of the conversation between therapist and client/patient as a means of diagnosing the subjective feeling of well-being - does that still occur? The elderly and the old are those who need ti most!

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